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The Effect of Patient-Centered Medical Homes on Provider Satisfaction and Burnout

Abstract

Background: This promise of a patient centered medical home (PCMH) is being embraced by many, in hopes that it will improve healthcare in the United States by decreasing costs and improving patient outcomes. However, as important as cost and patient outcomes are, another integral part of the PCMH equation isn't discussed very often: the providers. How will PCMHs impact providers? This systematic review of literature will investigate the use of PCMHs and its affect on the satisfaction and burnout of providers.

Methods: An exhaustive search of current medical literature was performed on Medline-OVID, EBMR-Cochrane Review, and CINAHL, using the keyword *patient-centered medical home* and the MESH terms *patient centered care*, *job satisfaction*, and *burnout*, *professional*. The references of relevant articles were screened for additional studies.

Results: Two articles were found to satisfy inclusion criteria. Lewis et al was an observational retrospective cohort study which used a self-administered survey in 2010 to assess staff morale, job satisfaction, burnout, and respondents' perceptions of PCMH characteristics at 65 safety net clinics in five states. Lewis et al found that the total PCMH score was associated with higher *staff* morale but that the *providers* had less freedom from burnout as the PCMH score increased. Reid et al used a prospective, two group before and after evaluation of the PCMH pilot at Group Health, located in western Washington. Researchers compared the staff and providers at the PCMH clinic with the staff and providers at two other non-PCMH clinics. At 24-months the mean emotional exhaustion scores for the PCMH was significantly lower than the control clinics.

Conclusion: Research on this topic is of low quality and is very limited with only one study assessing provider satisfaction and two studies assessing provider burnout. Though it may appear that PCMH may decrease provider burnout, conflict in the research does exist. More research is needed as PCMHs become an industry standard in the coming years.

Degree Type

Capstone Project

Degree Name

Master of Science in Physician Assistant Studies

Keywords

Burnout, Professional; Patient-centered care; Patient-centered Medical Home; Job Satisfaction

Subject Categories

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The Effect of Patient-Centered Medical Homes on Provider Satisfaction and Burnout

Mallory Danielson



*A Clinical Graduate Project Submitted to the Faculty of the
School of Physician Assistant Studies*

Pacific University

Hillsboro, OR

For the Masters of Science Degree, August 9, 2014

Faculty Advisor: Saje Davis-Risen, PA-C, MS

Clinical Graduate Project Coordinator: Annjanette Sommers, PA-C, MS

BIOGRAPHY

Mallory Danielson was raised in Provo, Utah and received her AS in Mathematics in 2008, her BS in Exercise Science in 2010, and an MPH in 2012. To combat her obvious nerd tendencies, she tries to spend time outdoors as much as possible. With great opportunities to rock climb, run, bike, snowboard, kayak, white water raft, and even surf, Mallory has truly fallen in love with Oregon. Mallory hopes to use her degrees to help alleviate suffering in the world through domestic and international work with the rural and underserved populations ignored by so many. She is so very grateful to Pacific University, her friends, and her family as they've helped her achieve her goals and more fully live her life.

ABSTRACT

Background: This promise of a [patient centered](#) medical home (PCMH) is being embraced by many, in hopes that it will improve healthcare in the United States by decreasing costs and improving patient outcomes. However, as important as cost and patient outcomes are, another integral part of the PCMH equation isn't discussed very often: the providers. How will PCMHs impact providers? This systematic review of literature will investigate the use of PCMHs and its affect on the satisfaction and burnout of providers.

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Conclusion: Research on this topic is of low quality and is very limited with only one study assessing provider satisfaction and two studies assessing provider burnout. Though it may appear that PCMH may decrease provider burnout, conflict in the research does exist. More research is needed as PCMHs become an industry standard in the coming years.

Keywords: *Burnout, Professional; Patient-centered care; Patient-centered Medical Home; Job Satisfaction*

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To *Susan B. Anthony*, thank you sew much.

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LIST OF ABBREVIATIONS

LPN.....	Licensed Practical Nurse
MA.....	Medical Assistant
NP.....	Nurse Practitioner
PA.....	Physician Assistant
PCMH.....	Patient-centered Medical Home
PPACA.....	Patient Protection and Affordable Care Act
RCT.....	Random-Controlled Trial
RN.....	Registered Nurse

The Effect of Patient-Centered Medical Homes on Provider Satisfaction and Burnout

BACKGROUND

“The medical home model holds promise as a way to improve health care in America by transforming how primary care is organized and delivered.”¹ This promise of a medical home is being embraced by many, in hopes that it will improve healthcare in the United States by decreasing costs and improving patient outcomes.^{2,3} Developed in 1967, medical homes were initially set up to manage the care of children with complicated diseases. Now, a medical home is defined by its five encompassing functions and attributes: comprehensive care, patient-centered care, coordinated care, accessible services, and quality and safety.¹ With the use of this model, also known as a patient-centered medical home (PCMH), there is hope to reduce unnecessary tests, redundant paperwork, and improve preventative care. Thus, medical homes have the potential to improve patient outcomes and decrease costs.

Healthcare in the US is expensive. In 2011, the United States spent 17.9% of its Gross Domestic Product on healthcare. This equates to \$8680 per person for a total of \$2.7 trillion dollars.⁴ Compared with the rest of the world, only Switzerland, Norway, and Luxembourg spend more per capita.⁵ However, the increased costs do not correspond to improved patient outcomes. Specifically, infant mortality rate is often used to judge the overall health of a nation. Ranked at 50 out of 224, the

United States falls behind such countries as Canada, Cuba, the UK, and Japan. For example, Japan spends half as much on healthcare and still has less than half of the infant deaths per capita than occur in the US.^{5,6}

With higher than average costs and lower than average outcomes, the Patient Protection and the Affordable Care Act (PPACA) was passed on March 21, 2010 to help combat this spending and to improve health. The PPACA advocates for the use of PCMHs and will shape the way that medicine is provided in the US. However, as important as cost and patient outcomes are, another integral part of the PCMH equation isn't discussed very often: the providers. How will PCMHs impact providers? Will PCMH place more responsibility on already overtaxed clinicians and increase risk for burnout? Or will the team approach and improved outcomes increase job satisfaction? Burnout is best described by Dr. Holt,

“Whether it is inertia after a long week of nights on call or intense surgical cases or a series of discouraging patient outcomes in spite of our every effort, we know the feeling...a sense of detachment from patients, emotional and physical exhaustion, discouragement about perceived accomplishments, and a general malaise within and outside the practice.”⁷

Measured through the Maslach Burnout Inventory, nearly 60% of all medical students, residents, interns, medical professors, and private clinicians are affected by burnout.⁸⁻¹³ This burnout can lead to depression, anxiety, other problems associated with psychological morbidity, and in some cases a decrease in patient care.¹⁴⁻¹⁶ Therefore, this systematic review of literature will investigate the use of PCMHs and its affect on the satisfaction and burnout of providers.

METHODS

An exhaustive search of current medical literature was performed on Medline-OVID, EBMR-Cochrane Review, and CINAHL, using the keyword *patient-centered medical home* and the MESH terms *patient centered care*, *job satisfaction*, and *burnout*, *professional*. The references of relevant articles were screened for additional studies. See Figure 1.

Throughout this paper *providers* are defined as physicians, physician assistants (PAs), and nurse practitioners (NPs). Other *staff* included in patient care are registered nurses (RNs), medical assistants (MAs), and licensed practical nurses (LPNs).

RESULTS

CINAHL yielded 16 articles for review. Of these 16 articles, only two satisfied the clinical question: Lewis et al¹⁷ and Reid et al.¹⁸ After eliminating 25 other articles, the search on Medline-OVID also found Lewis et al¹⁷ and Reid et al.¹⁸ EBM Reviews resulted in seven articles, one of which was a publication¹⁹ of earlier results Reid et al¹⁸; the rest were excluded due to failure to meet inclusion criteria.

Using Web of Science the references in the selected papers and those which cited the selected papers were also analyzed. Lewis et al¹⁷ cited 30 articles and is cited by two articles, none of which were included. Reid et al¹⁸ was cited by 102 articles and cited 26 articles, one of which was a prior publication¹⁹ of this study.

In total, 210 articles were discovered and analyzed by reading the title and abstract. After elimination of unrelated articles and duplicates, only two articles were found to answer the question, “Does the use of PCMH affect provider satisfaction and

burnout?": Lewis et al¹⁷ and Reid et al.¹⁸ See Figure 2 for a summary of these findings.

Lewis et al

Design— This observational retrospective cohort study¹⁷ used a self-administered survey in 2010 to assess staff morale, job satisfaction, burnout, and respondents' perceptions of PCMH characteristics at 65 safety net clinics in five states. The 65 clinics were chosen due to their participation in The Safety Net Medical Home Initiative, which was supported by the Commonwealth Fund. The Commonwealth Fund also funded this study. ¹⁷

PCMH characteristics were assessed through a scale of 0-100: access to care and communication with patients, communication with other providers, tracking data, care management, and quality improvements. This method was based on the 2008 National Committee for Quality Assurance PCMH standards and appears to be a valid way of measuring PCMH Characteristics. ^{17,21}

Satisfaction was measured through participants' response on a 5-point Likert-type scale (strongly disagree to strongly agree) to the statement, "Overall, I am satisfied with my current job." ¹⁷

Burnout was not measured through a validated scale such as the Maslach Burnout Inventory, which is the industry standard. Instead it was measured through participants' response to the statement, "Using your own definition of burnout, please check one", with responses ranging from "I enjoy my work" to "I feel completely burnout out and often wonder if I can go on." ¹⁷

Lewis et al¹⁷ used included control variables such as presence of an EMR, work environment, whether the clinic reported provider or nursing shortages, and the years since the end of clinical training.¹⁷

Demographics—Surveys were provided to 603 persons, of which 391 were medical providers. The *provider* response rate was 79.8%. There was a significant difference between nonresponders and responders by region and location ($p=0.002$). Lewis states that most nonresponders were from Massachusetts and from city based clinics. Most responders were non-Hispanic white females physicians. A summary of the demographic data provided for this group can be found in Table 1.¹⁷

Results—Lewis et al¹⁷ reported that job satisfaction and burnout responses were strongly skewed to the positive end of the scales. First, 53.7% of respondents rated job satisfaction as very good, which was the 2nd highest option on the 5-point Likert-type scale. On the other hand, 49.5% of respondents rated burnout as "Occasionally I am under stress at work, but I don't feel burned out", the 2nd highest option provided.¹⁷

Lewis et al¹⁷ found that the total PCMH score was associated with higher *staff* morale but that the *providers* had less freedom from burnout as the PCMH score increased. Of the PCMH subscales, higher quality improvement correlated with higher moral and greater job satisfaction in *staff* and *providers*. However, the *staff*, not the *providers*, were the ones who had greater freedom from burnout.¹⁷

Reid et al

Design— Reid et al¹⁸ used a prospective, two group before and after evaluation of the PCMH pilot at Group Health, located in western Washington. They assessed outcomes at baseline, 12 months, and 24 months. Researchers compared the staff and providers at the PCMH clinic with the staff and providers at two other non-PCMH clinics which were chosen due to their similarities in size, Medicare enrollment, and leadership stability. In 2006, all staff at the PCMH and two control clinics were asked to complete an online survey using the Maslach Burnout Inventory, Health Services version.¹³ The Maslach Burnout Inventory measures burnout through three scales: emotional exhaustion, depersonalization (unfeeling and impersonal response toward recipients of one's service), and personal accomplishment; total scores are also evaluated.^{18,20} No mention of controlling confounding factors was made. The PCMH characteristics were not assessed.¹⁸

Reid et al are investigators with the Group Health Research Institute in Washington, the same organization that is being studied as the PCMH.¹⁸

Demographics— The sample size was 48 over the three years with response rates of 79%, 83%, and 71% respectively. No analysis on characteristics for nonresponders was published. The majority of the respondents were females aged <54. A summary of the demographic data for this study can be found in Table 2.¹⁸

Results— At 24-months the mean emotional exhaustion scores for the PCMH was significantly lower than the control clinics (mean 12.8 vs. 25.0; $p < .01$). The depersonalization scale also showed lower levels for the PCMH (mean 2.0 and 4.4;

p=0.03). However, the last scale, personal accomplishment, was not statistically different between the PCMH and the controls. No information on the actual distribution of the results was provided.¹⁸

DISCUSSION

PCMHs are becoming the way to deal with our healthcare problems in the United States. Though it is important to know if it improves patient outcomes and decreases cost, it is also important to know the effect of PCMHs on providers' satisfaction and burnout.

Lewis et al¹⁷ was the only one to study provider and staff satisfaction. They found that PCMH's increased both *staff* and *provider* satisfaction. However, when Lewis et al¹⁷ studied burnout, they found that while *staff* had *increased* freedom from burnout, PCMHs actually *decreased* freedom from burnout for *providers*. This is an especially interesting finding when compared to Reid et al¹⁸ who found that PCMHs *increased* freedom from burnout for *providers* and *staff*.

Limitations

Lewis et al¹⁷ and Reid et al¹⁸ both have limitations on generalization as they studied a very select sample population. This enabled accurate between group comparisons but this meant that their results may not apply to any other population group. Lewis et al¹⁷ also has significant differences between their responders and nonresponders, which may have adversely affected the results of the study. Reid et al¹⁸ didn't address the differences between responding and nonresponding groups and may have the same problem as Lewis et al.¹⁷ Lewis et al¹⁷ had a sample size of

392 which is adequate. However, Reid et al¹⁸ had a small sample size of 48 providers.

Lewis et al¹⁷ also had serious problems in the way that it assessed outcomes: Maslach Burnout Inventory was not used and satisfaction was only assessed with one question. Lewis et al¹⁷ found their assessment of job satisfaction and burnout was highly skewed, which may indicate that the question was not sensitive enough to reveal the satisfaction and burnout distribution that exists among the associated staff. This may also mean that there was no difference, however, it is unlikely that the majority of all providers are at the same level of satisfaction and burnout with their job.

Reid et al¹⁸ did use Maslach Burnout Inventory but didn't assess PCMH characteristics at all of the clinics and didn't control for confounding factors, as Lewis et al¹⁷ did. Reid et al¹⁸ didn't provide information on actual distribution of the responses; however, a large difference was seen between baseline and intervention. This may indicate that the scale is sensitive enough to assess differences that exist.

Both studies^{17,18} used self-administered surveys, which have inherent flaws due to recall bias and responder bias. Also, neither study mentioned if the results of the surveys were kept anonymous. As such, this may mean that participants may not have answered truthfully due to the chance peers, management, funders, etc. may be reviewing their answers.

Both studies^{17,18} were funded by the organization which they were studying. This conflict of interest indicates that there is a strong possibility that negative results would not have been published.

GRADE

GRADE has four levels to represent the quality of evidence:

- High
- Moderate
- Low
- Very Low

To begin in this process the design of the study is initially assigned a level, with observational studies being given a *Low* rating and RCT given a *High* rating. From here five different categories will be assessed, with upgrades or downgrades being awarded based on the study's ability to satisfy the requirements for each of the categories. Note: Once a study has been downgraded to a *Very Low* level, it cannot be upgraded.

The five categories that are being assessed are:

1. Limitations
2. Inconsistent Results
3. Indirectness of Evidence
4. Imprecision
5. Publication Bias

Both Lewis et al¹⁷ and Reid et al¹⁸ were given a grade of *Very Low*. A summary can be found in Table 3.

CONCLUSION

Patient Centered Medical Homes are seen to be the panacea for the healthcare problem. However important cost savings and patient outcomes are, we do need to remember that providers are an integral part in the system. Without their buy-in there's no chance of success. Research on this topic is of low quality and is very limited with only one study assessing provider satisfaction and two studies

assessing provider burnout. Though it may appear that PCMH may decrease provider burnout, conflict in the research does exist. More research is needed as PCMHs become an industry standard in the coming years.

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Figure 1: The Search Equation

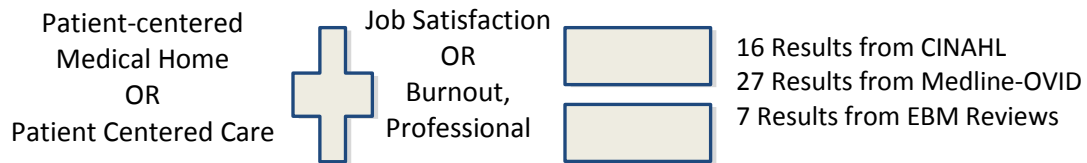


Figure 2: Search Results

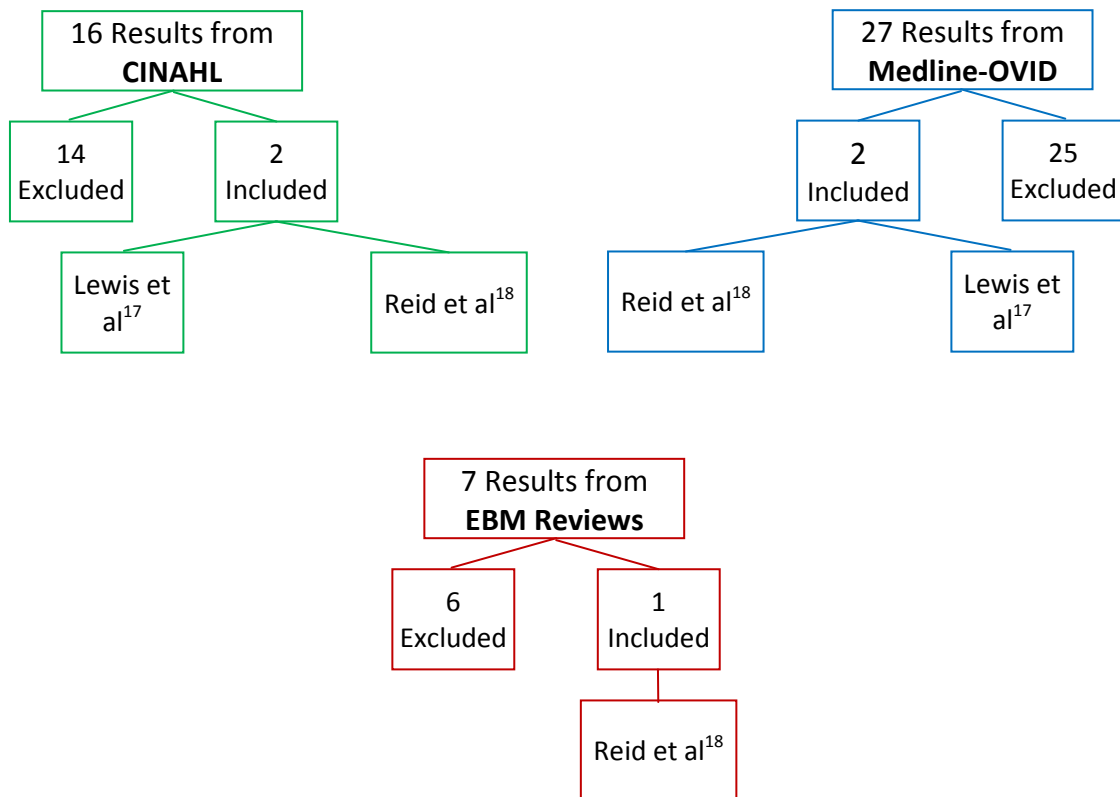


Table 1: Lewis et al¹⁷ Participant Characteristics

Characteristics (%)	Respondents (n=603)
Female sex	78.3
Race/ethnicity	
White	71.8
Other	28.2
Provider/Staff Type	
Physician	33.5
NP/PA	19.1
RN	13.3
LPN/ MA	22.7
Other	11.4

Table 2: Reid et al¹⁸ Participant Characteristics

Characteristics (%)	Baseline Survey		12-month Follow-up	
	PCMH Clinic (n=40)	Control Clinic (n=64)	PCMH Clinic (n=35)	Control Clinic (n=47)
Female sex	89.7	87.7	88.6	80.0
Age >54y	35.9	14.3	47.1	25.0
Physicians/PAs	30.8	16.1	31.4	25.5
Other clinical staff	69.2	83.9	68.6	72.3

Table 3: Characteristics and Summary of Reviewed Studies

							Summary of Findings		
	Downgrade Criteria						Number of Participants	Results	Quality
Study	Design	Limitations	Inconsistency	Indirectness	Imprecision	Publication bias			
	Provider Satisfaction								
Lewis et al ¹⁷	Observational: Retrospective Cohort Study	Serious limitations ^a	Serious inconsistency	No serious indirectness	No serious imprecision	Bias likely ^b	312	Increase in provider and staff satisfaction	Very low
	Burnout								
Lewis et al ¹⁷	Observational: Retrospective Cohort Study	Very serious limitations ^{a,c}	Serious inconsistency	Serious indirectness	No serious imprecision	Bias likely ^b	312	Increase in provider burnout (OR 0.48; 95% CI 0.30-0.77)	Very low
Reid et al ¹⁸	Quasi-Experimental: Prospective Before and After Evaluation	Very serious limitations ^{d, e}	No inconsistency	Serious indirectness	Serious imprecision ^f	Bias likely ^b	48	Decrease in emotional exhaustion (p<0.01) and depersonalization (p=0.03)	Very low

^a High risk of bias since nonresponders differed significantly from respondents

^b Research was a self-assessment

^c High risk of bias due to phrasing of burnout assessment scale and failure to use validated assessment tool

^d Failed to account for confounders, including measuring level of PCMH compliance of the clinic.

^e Failed to delineate demographics between responders and nonresponders

^f Small sample size